

# Up To Date

NASA IV&V Program  
Educator Resource Center Newsletter

October 2010

## Dynamic Planet at the ERC and WVSTA

**NASA** Goddard's Dynamic Planet display is an interactive 3-D visualization tool that projects NASA satellite data, Earth science videos, and even planetary images on the inside of a globe.

The touch-screen display allows the public to easily change views and learn about the Earth System from global data sets on such topics as CO2 levels, ocean temperatures, clouds, arctic ice extents, and much more. The sun and planet shows allow the user to explore other aspects of the Solar System.

The ERC brought the display to the annual WV Science Teachers Association conference, held this year in Wheeling, WV October 21-23 where it was used by science teachers from across West Virginia.



*Todd Ensign, ERC Program Manager, and Greg Blaney, acting Director of NASA IV&V, explore the many features of the Dynamic Planet.*

With interactive topics such as the Earth, Heliophysics, Planets, Astrophysics, and Geophysics, the Dynamic Planet presents a wealth of information while engaging the viewer with beautiful imagery and audio.

"Dynamic Planet is one of the most engaging tools I have used which allows the public to explore NASA data and see how it is relevant to their lives," stated Todd Ensign.

## Bruceton Students Evaluate Local Stream



*Whoops! How wet can you get?*

**B**ruceton middle school students recently completed a unit on stream study. Using Pasco GLX probes from the ERC, the

students measured a number of factors such as pH, dissolved oxygen, conductivity, and temperature that affect water quality. Frank Bogdon Jr., teacher at Bruceton, reports "Having access to thousands of dollars worth of equipment is just unfathomable. The ease of access and use really made this a great project. A quote from one of my students, 'I feel like a professional.' sort of says it all. This process took learning and raised the level of authenticity for me and my students. It has been great."

Mrs. Humberson, another Bruceton teacher, taught a watershed unit to her fifth grade class. One activity had them investigating contamination of well water in a town. It turned out to be due to deteriorating coffins in a Civil War cemetery. The embalming process at that time used arsenic and it was leaching into the water. They concluded their many activities with a presentation to the local town council.

FSU, Preston County Schools, FODC, and the NASA IV&V

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*Wet feet doesn't stop these students from collecting their data.*

Program made these experiences possible through a grant funded professional development experience for educators in Preston County.

## Upcoming ERC Workshops

- October 14** Viewing the Universe with Telescopes.....6-9 pm
- October 16 (Webinar)** Black Holes 101 .....10:30 am-12 pm
- October 21-23** WV Science Teachers Association Conf. .... Olgebay Park Wheeling, WV
- Robotic Explorations ...Sat. 9:45-10:45 am
- Intro to GLOBE and GPS..Sat. 11:00—11:30 am
- November 6** Robots and Ratios.10 am - 4 pm
- November 11** Kindernauts, Echo the Bat, and Carnegie Dinosaurs.....12-5 pm
- November 18 (Webinar)** Invite NASA to Your Science Fair .....1—2 pm
- November 20** Intro. To GLOBE and Surface Temperature.....10 am– 4pm
- November 23** Fly by Math.....5—7 pm

## Using GPS



*Dave Sheldon, NASA IV&V, led twenty-three adults and youth on a wilderness camping trip where they used the ERC's GPS units to teach navigation skills and how to participate in the sport of geocaching.*

## NASA's New Associate Administrator for Education

### NASA Administrator Charles

Bolden announced October 26 the selection of Leland D. Melvin as the agency's new associate administrator for education, effective immediately. He succeeds James L. Stofan, who had served in an acting capacity since the spring.

Melvin joined NASA in 1989 as an aerospace research engineer at the agency's Langley Research Center in Hampton, Va. He joined the astronaut corps in 1998 and has served as a mission specialist on two space shuttle missions: STS-122 in 2008 and STS-129 in 2009. He has logged more than 565 hours in space. In 2003, Melvin co-managed the former Educator Astronaut Program, which recruited teachers to become fully-trained astronauts in an effort to connect space

exploration with students across the country.

"My passion for education was inspired



*Astronaut Leland Melvin explains the components of the International Space Station to students at the Science Museum of Virginia.*  
Image Credit: NASA/Sean Smith

by my parents, who were both middle school teachers," Melvin said. "I witnessed the direct impact that educators can have in a community and on an individual's destiny. NASA's people, programs and resources are unparalleled. Our unique assets are poised to engage students, to captivate their imagination and to encourage their pursuit of STEM-related studies that are so vital to their future. This is an exciting challenge and I am ready to work with Administrator Bolden, my colleagues at NASA, our partners, and students across the country to usher in a new era of opportunity to inspire that next generation of explorers."

As associate administrator, Melvin will be responsible for the development and implementation of the agency's education programs that strengthen student involvement and public awareness about NASA's scientific goals and missions.



## NASA's Educational Goals

**NASA's** journeys into air and space have deepened humankind's understanding of the universe, advanced technology breakthroughs, enhanced air travel safety and security, and expanded the frontiers of scientific research. These accomplishments share a common genesis: education. As the United States begins the second century of flight, the Nation must maintain its commitment to excellence in science, technology, engineering and mathematics education to ensure that the next generation of Americans can accept the full measure of their roles and responsibilities in shaping the future. NASA will continue the Agency's tradition of investing in the Nation's education programs and supporting the country's educators who play a key role in preparing, inspiring, exciting, encouraging, and nurturing the young minds of today who will be the workforce of tomorrow.

NASA will continue to pursue three major education goals:

- **Strengthening NASA and the Nation's future workforce**
- **Attracting and retaining students in science, technology, engineering and mathematics, or STEM, disciplines**
- **Engaging Americans in NASA's mission**

through the constellation Auriga, just south of the bright star Capella. Viewing of Hartley 2 from high ambient light locations including urban areas may be more difficult. By the last week of October, the comet will have passed through the constellation Auriga. It will continue its journey across the night sky in the direction of the constellation Gemini.

EPOXI is an extended mission that utilizes the already "in-flight" Deep Impact spacecraft to explore distinct celestial targets of opportunity. Images and videos of comet Hartley 2 from both amateur observers and major observatories are online at:

<http://aop.astro.umd.edu/gallery/hartley.shtml> .



*Summer of Innovation is a multi-faceted, intensive middle school science, technology, engineering and mathematics, or STEM, project with a pilot conducted during the summer 2010. Summer of Innovation is designed to improve STEM teaching and learning in partnership with federal agencies, academic and informal organizations, nonprofits, and industry. Learn more about this project by visiting the website.*

<http://www.nasa.gov/offices/education/programs/national/summer>

## The Comet Cometh: Hartley 2 Visible with Binoculars and Telescopes



*This image of comet Hartley 2 was captured by amateur astronomer Byron Bergert on Oct. 4 in Gainesville, Florida. Image credit: Byron Bergert*

**B**ackyard stargazers with a telescope or binoculars and a clear night's sky can now inspect the comet that in a little over two weeks will become only the fifth in history to be imaged close up. NASA's EPOXI mission will come within 700 kilometers (435 miles) of Hartley 2 on Nov. 4.

"The last ten days of October, the comet will be the closest it has ever been since it was discovered in 1986 by Australian astronomer Malcolm Hartley," said Don Yeomans, head of NASA's Near-Earth Object Office at the Jet Propulsion Laboratory in Pasadena, Calif. and a member of the EPOXI science team. "It's unusual for a comet to approach this close. It is nice of Mother Nature to give us a preview before we see Hartley 2 in all its cometary glory with some great close-up images on Nov.4."

Comet Hartley 2, also known as 103P/Hartley 2, is a relatively small, but very active periodic comet that orbits the sun once every 6.5 years. From dark, pristine skies in the Northern Hemisphere, the comet should be visible with binoculars as a fuzzy object passing

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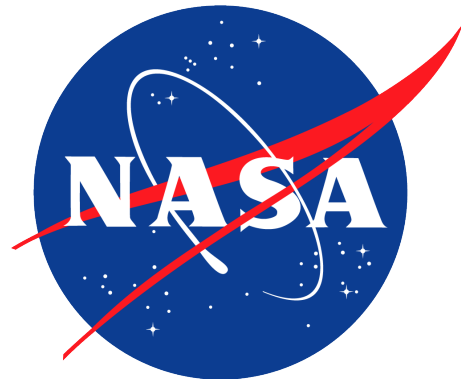
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**We're on the web!**

<http://erc.ivv.nasa.gov>



*The NASA Independent Verification and Validation Program Educator Resource Center's goal is to serve teachers, informal educators, and pre-service teachers to enable them to reach their goals. Through a grant with Fairmont State University, the NASA IV&V Program ERC provides materials, equipment for loan, and professional development workshops for informal and formal educators both at the facility and around the state of West Virginia that reflect NASA's current research and technology.*



## Where in WV is the ERC?

October Workshops in Red

October Equipment Loans in Blue

### To schedule a workshop:

Contact the ERC by calling 304-367-8436 or emailing:

[pamela.casto@ivv.nasa.gov](mailto:pamela.casto@ivv.nasa.gov)

### To schedule equipment for loan:

First check the equipment loan calendar on the ERC website to see if the equipment is available for the dates desired. Then email Amy Phillips who will schedule the dates.

[amy.phillips@ivv.nasa.gov](mailto:amy.phillips@ivv.nasa.gov)

Calling Amy Friend at 304-367-8251 is also an option for scheduling.

